

# How to live with **Osteoarthritis**



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# Osteoarthritis

**T**his booklet is for people who have osteoarthritis, their families, and others interested in learning more about the disorder. The booklet describes osteoarthritis and its symptoms and contains information about diagnosis and treatment, as well as current research efforts. It also discusses pain relief, exercise, and quality of life for people with osteoarthritis. If you have further questions after reading this booklet, you may wish to discuss them with your doctor.



## What Is Osteoarthritis?

**O**steoarthritis (AH-stee-oh-ar THREYE-tis) is the most common type of arthritis, especially among older people. Sometimes it is called degenerative joint disease or osteoarthrosis.

Osteoarthritis is a joint disease that mostly affects the cartilage (KAR-til-uj). Cartilage is the slippery tissue that covers the ends of bones in a joint. Healthy cartilage allows bones to glide over one another. It also absorbs energy from the shock of physical movement. In osteoarthritis, the surface layer of cartilage breaks down and wears away. This allows bones under the cartilage to rub together, causing pain, swelling, and loss of motion of the joint. Over time, the joint may lose its normal shape. Also, bone spurs - small growths called osteophytes - may grow on the edges of the joint. Bits of bone or cartilage can break off and float inside the joint space. This causes more pain and damage.





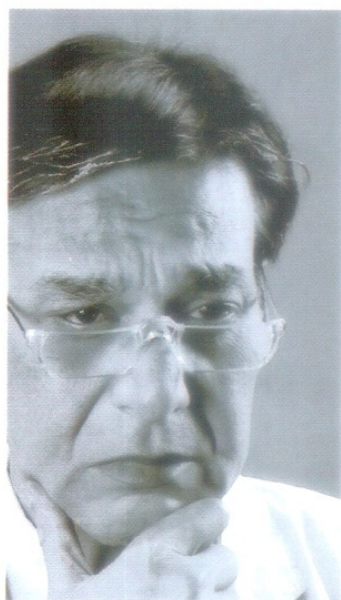
People with osteoarthritis usually have joint pain and limited movement. Unlike some other forms of arthritis, osteoarthritis affects only joints and not internal organs. For example, rheumatoid arthritis - the second most common form of arthritis - affects other parts of the body besides the joints. Rheumatoid arthritis begins at a younger age than osteoarthritis, causes swelling and redness in joints, and may make people feel sick, tired, and (uncommonly) feverish.

## Who Has Osteoarthritis?

**O**steoarthritis is one of the most frequent causes of physical disability among adults. It is estimated that more than 20 million people in India have the disease. Some younger people get osteoarthritis from joint injuries, but osteoarthritis most often occurs in older people. In fact, more than half of the population age 65 or older would show x-ray evidence of osteoarthritis in at-least one joint. Both men and women have the disease. Before age 45, more men than women have osteoarthritis, whereas after age 45, it is more common in women.

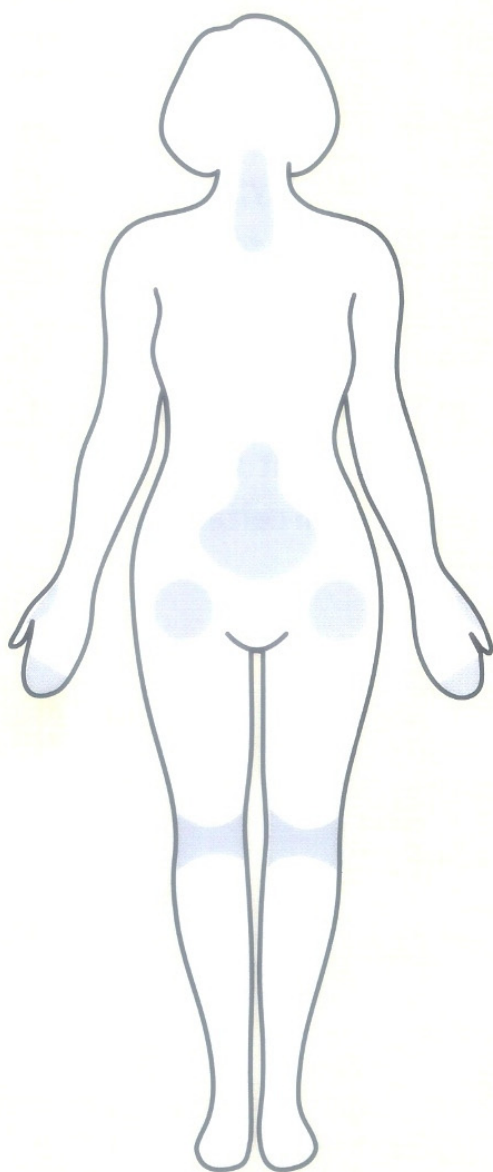
## How Does Osteoarthritis Affect People?

**O**steoarthritis affects each person differently. In some people, it progresses quickly; in others, the symptoms are more serious. Scientists do not know yet what causes the disease, but they suspect a combination of factors, including being overweight, the aging process, joint injury, and stresses on the joints from certain jobs and sports activities.





## What Areas Does Osteoarthritis Affect?



Osteoarthritis most often occurs at the ends of the fingers, thumbs, neck, lower back, knees, and hips.

Osteoarthritis hurts people in more than their joints: their finances and lifestyles also are affected.

## **Financial effects include**

- The cost of treatment
- Wages lost because of disability.

## **Lifestyle effects include**

- Depression
- Anxiety
- Feelings of helplessness
- Limitations on daily activities
- Job limitations
- Trouble participating in everyday personal and family joys and responsibilities.

Most people with osteoarthritis can lead active and productive lives.

They succeed by using osteoarthritis treatment strategies, such as -

- Relief medications
- Rest and exercise
- Patient education and support programs
- Learning self-care and having a “good-health attitude.”

# Osteoarthritis Basics: The Joint and Its Parts

**M**ost joints - the place where two moving bones come together - are designed to allow smooth movement between the bones and to absorb shock from movements like walking or repetitive movements. The joint is made-up of:

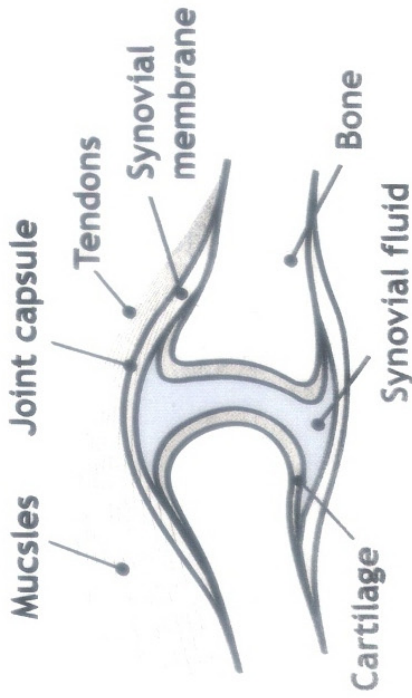
- **Cartilage:** a hard but slippery coating on the end of each bone.
- **Joint capsule:** a tough membrane sac that holds all the bones and other joint parts together.
- **Synovium** (sin-O-vee-um): a thin membrane inside the joint capsule.
- **Synovial fluid:** a fluid that lubricates the joint and keeps the cartilage smooth and healthy.
- **Ligaments, tendons, and muscles:** tissues that keep the bones stable and allow the joint to bend and move. Ligaments are tough, cord-



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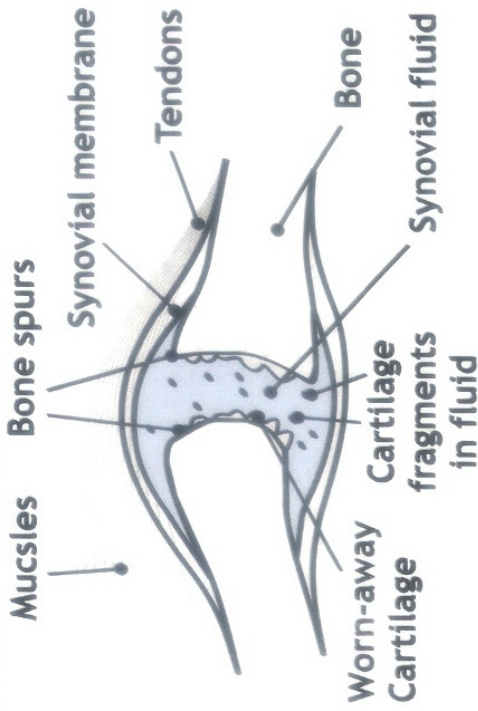
like tissues that connect one bone to another. Tendons are tough, fibrous cords that connect muscles to bones. Muscles are bundles of specialized cells that contract to produce movement when stimulated by nerves.

## A Healthy Joint



In a healthy joint, the ends of bones are encased in smooth cartilage. Together, they are protected by a joint capsule lined with a synovial membrane that produces synovial fluid. The capsule and fluid protect the cartilage, muscles, and connective tissues.

## A Joint With Osteoarthritis



With osteoarthritis, the cartilage become worn away. Spurs grow out from the edge of the bone, and synovial fluid increases. Altogether, the joint feels stiff and sore.

## Cartilage: The Key to Healthy Joints

Cartilage is 65 to 80 percent water. Three other components make up the rest of cartilage tissue: collagen, proteoglycans, and chondrocytes.

- **Collagen** (KAHL-uh-jen): a fibrous protein. Collagen is also the building block of skin, tendon, bone, and other connective tissues.
- **Proteoglycans** (PRO-tee-uh-GLY-kanz): a combination of proteins and sugars. Strands of proteoglycans and collagen weave together and form a mesh-like tissue. This allows cartilage to flex and absorb physical shock.
- **Chondrocytes** (KAHN-druh-sytz): cells that are found all through the cartilage. They mainly help cartilage stay healthy and grow. Sometimes, however, they release substances called enzymes that destroy collagen and other proteins. Researchers are trying to learn more about chondrocytes.



## How Do You Know if You Have Osteoarthritis?

Usually, osteoarthritis comes on slowly. Early in the disease, joints may ache after physical work or exercise. Osteoarthritis can occur in any joint. Most often it occurs at the knees, hips, hands, or spine.

**Knees:** The knees are the body's primary weight-bearing joints. For this reason, they are among the joints most commonly affected by osteoarthritis. They may be stiff, swollen, and painful, making it hard to walk, climb, and get in and out of chairs. If not treated, osteoarthritis in the knees can lead to disability. Medications, weight loss, exercise, and walking aids can reduce pain and disability. In severe cases, knee replacement surgery may be helpful.



**Hips:** Osteoarthritis in the hip can cause pain, stiffness, and severe disability. People may feel the pain in their hips, or in their groin, inner thigh, buttocks, or knees. Walking aids, such as canes or walkers, can reduce stress on the hip. Osteoarthritis in the hip may limit moving and bending. This can make daily activities such as dressing and foot care a challenge. Walking aids, medication, and exercise can help relieve pain and improve motion. The doctor may recommend hip replacement if the pain is severe and not relieved by other methods.

**Hands:** Osteoarthritis of the fingers is one type of osteoarthritis that seems to have some hereditary characteristics; that is, it runs in families. More women than men have it, and they develop it especially after menopause. In osteoarthritis, small, bony knobs appear on the end joints of the fingers. They are called Heberden's (HEB-err-denz) nodes. Similar knobs, called Bouchard's (boo-SHARDZ) nodes, can appear on the middle joints of the fingers. Fingers can become enlarged and gnarled, and they may ache or be stiff and numb. The base of the thumb joint also is commonly affected by osteoarthritis. Osteoarthritis of the hands can be helped by medications, splints, or heat treatment.



**Spine:** Stiffness and pain in the neck or in the lower back can result from osteoarthritis of the spine. Weakness or numbness of the arms or legs also can result. Some people feel better when they sleep on a firm mattress or sit using back support pillows. Others find it helps to use heat treatments or to follow an exercise program that strengthens the back and abdominal muscles. In severe cases, the doctor may suggest surgery to reduce pain and help restore function.

### **The Warning Signs of Osteoarthritis**

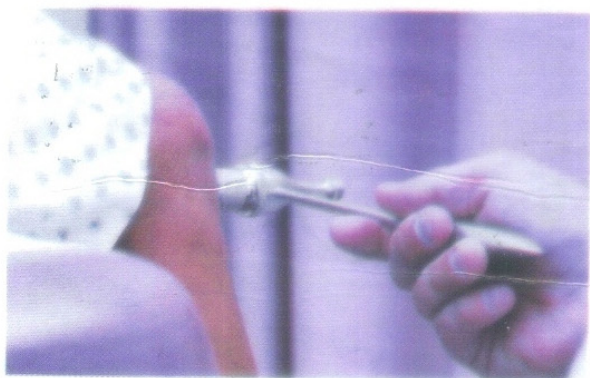
- **Steady or intermittent pain** in a joint
- **Stiffness** in a joint after getting out of bed or sitting for a long time
- **Swelling or tenderness** in one or more joints
- **A crunching feeling** or the sound of bone rubbing on bone
- **Hot, red, or tender?** Probably not osteoarthritis. Check with your doctor about other causes, such as rheumatoid arthritis.
- **Pain?** Not always. In fact, only a third of people whose x rays show evidence of osteoarthritis report pain or other symptoms.



# How Do Doctors Diagnose Osteoarthritis?

No single test can diagnose osteoarthritis. Most doctors use a combination of the following methods to diagnose the disease and rule out other conditions:

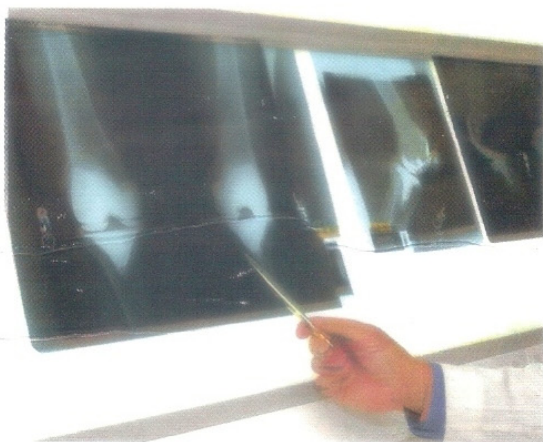
**Clinical history:** The doctor begins by asking the patient to describe the symptoms, and when and how the condition started. Good doctor-patient communication is important. The doctor can give a better assessment if the patient gives a good description of pain, stiffness, and joint function, and how they have changed over time. It also is important for the doctor to know how the condition affects the patient's work and daily life. Finally, the doctor also needs to know about other medical conditions and whether the patient is taking any medicines.



**Physical examination:** The doctor will check the patient's general health, including checking reflexes and muscle strength. Joints bothering the patient will be examined. The doctor will also observe the patient's ability to walk, bend, and carry out activities of daily living.

**X rays:** Doctors take x rays to see how much joint damage has been done. X rays of the affected joint can show such things as cartilage loss, bone damage, and bone spurs. But there often is a big difference between the severity of osteoarthritis as shown by the x ray and the degree of pain and disability felt by the patient. Also, x rays may not show early osteoarthritis damage, before much cartilage loss has taken place.

**Other tests:** The doctor may order blood tests to rule out other causes of symptoms. Another common test is called joint aspiration, which involves





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drawing fluid from the joint for examination.

It usually is not difficult to tell if a patient has osteoarthritis. It is more difficult to tell if the disease is causing the patient's symptoms. Osteoarthritis is so common - especially in older people - that symptoms seemingly caused by the disease actually may be due to other medical conditions. The doctor will try to find out what is causing the symptoms by ruling out other disorders and identifying conditions that may make the symptoms worse. The severity of symptoms in osteoarthritis is influenced greatly by the patient's attitude, anxiety, depression, and daily activity level.



# How Is Osteoarthritis Treated?

**M**ost successful treatment programs involve a combination of treatments tailored to the patient's needs, lifestyle, and health. Osteoarthritis treatment has four general goals:

- **Improve joint care** through rest and exercise.
- **Maintain an acceptable body weight.**
- **Control pain** with medicine and other measures.
- **Achieve a healthy lifestyle.**

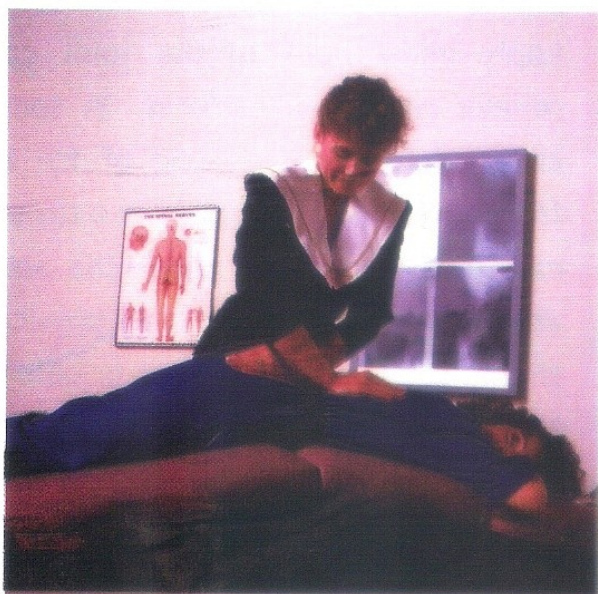
Osteoarthritis treatment plans often include ways to manage pain and improve function. Such plans can involve exercise, rest and joint care, pain relief, weight control, medicines and surgery.

## Treatment Approaches to Osteoarthritis?

- Exercise
- Weight control
- Rest and joint care
- Pain relief techniques
- Medicines
- Surgery

**Exercise:** Research shows that exercise is one of the best treatments for osteoarthritis. Exercise can improve mood and outlook, decrease pain, increase flexibility, improve the heart and blood flow, maintain weight, and promote general physical fitness. The amount and form of exercise will depend on which joints are involved, how stable the joints are, and whether a joint replacement has already been done.

**Rest and joint care:** Treatment plans include regularly scheduled rest. Patients must learn to recognize the body's signals, and know when to stop or slow down, which prevents pain caused by overexertion. Some patients find that relaxation techniques, stress reduction, and biofeedback help. Some use canes and splints to protect joints and take pressure off them. Splints or braces







provide extra support for weakened joints. They also keep the joint in proper position during sleep or activity. Splints should be used only for limited periods because joints and muscles need to be exercised to prevent stiffness and weakness. An occupational therapist or a doctor can help the patient get a properly fitting splint.

***Non drug pain relief:*** People with osteoarthritis may find nondrug ways to relieve pain. Warm towels, hot packs, or a warm bath or shower to apply moist heat to the joint can relieve pain and stiffness. In some cases, cold packs (a bag of ice or frozen vegetables wrapped in a towel) can relieve pain or numb the sore area. (Check with a doctor or physical therapist to find out if heat or cold is the best treatment.) Water therapy in a heated pool or whirlpool also may relieve pain and stiffness. For osteoarthritis in the knee, patients



may wear insoles or cushioned shoes to redistribute weight and reduce joint stress.

**Weight control:** Osteoarthritis patients who are overweight or obese need to lose weight. Weight loss can reduce stress on weight-bearing joints and limit further injury. A dietitian can help patients develop healthy eating habits. A healthy diet and regular exercise help reduce weight.

**Medicines:** Doctors prescribe medicines to eliminate or reduce pain and to improve functioning. Doctors consider a number of factors when choosing medicines for their patients with osteoarthritis. Two important

### Questions To Ask Your Doctor About Medicines

- How often should I take this medicine?
- Should I take this medicine with food or between meals?
- What side effects can I expect?
- Should I take this medicine with the other prescription medicines I take?
- Should I take this medicine with the over-the-counter medicines I take?

factors are the intensity of the pain and the potential side effects of the medicine. Patients must use medicines carefully and tell their doctors about any changes that occur.

The following types of medicines are commonly used in Osteoarthritis - Acetaminophen, NSAID's (nonsteroidal anti-inflammatory drugs), COX-II inhibitors etc.

**Oral SYSADOA** (symptomatic slow acting drugs for osteoarthritis) *Glucosamine Sulphate, Chondroitin Sulphate, Diacerein* have also been reported to improve the symptoms of people with osteoarthritis. **Oral SYSADOA** may be a safer option as they delay the cartilage degradation process and possibly also help in rebuilding the extracellular matrix in the articular cartilage.

**Surgery:** For many people, surgery helps relieve the pain and disability of osteoarthritis. Surgery may be performed to

- Remove loose pieces of bone and cartilage from the joint if they are causing mechanical symptoms of buckling or locking
- Resurface (smooth out) bones
- Reposition bones
- Replace joints.





Surgeons may replace affected joints with artificial joints called prostheses. These joints can be made from metal alloys, high-density plastic, and ceramic material. They can be joined to bone surfaces by special cements. Artificial joints can last 10 to 15 years or longer. About 10 percent of artificial joints may need revision. Surgeons choose the design and components of prostheses according to their patient's weight, sex, age, activity level, and other medical conditions.

The decision to use surgery depends on several things. Both the surgeon and the patient consider the patient's level of disability, the intensity of pain, the interference with the patient's lifestyle, the patient's age, and occupation. Currently, more than 80 percent of osteoarthritis surgery cases involve replacing the hip or knee joint. After surgery and rehabilitation, the patient usually feels less pain and swelling, and can move more easily.



## **Be a Winner!** **Practice Self-Care** **and Keep a** **"Good-Health Attitude"**

**P**eople with osteoarthritis can enjoy good health despite having the disease. How? By learning self-care skills and developing a "good-health attitude."

Self-care is central to successfully managing the pain and disability of osteoarthritis. People have a much better chance of having a rewarding lifestyle when they educate themselves about the disease and take part in their own care. Working actively with a team of health care providers enables people with the disease to minimize pain, share in decisionmaking about treatment, and feel a sense of control over their lives.

### **Self-Management Programs Do Help**

People with osteoarthritis find that self-management programs help them

- Understand the disease
- Reduce pain while remaining active
- Cope physically, emotionally, and mentally
- Have greater control over the disease
- Build confidence in the ability to live an active, independent life.

Research shows that people with osteoarthritis who take part in their own care report less pain and make fewer doctor visits. They also enjoy a better quality of life.

**Exercise:** Regular physical activity plays a key role in self-care and wellness. Two types of exercise are important in osteoarthritis management. The first type, therapeutic exercises, keep joints working as well as possible. The other type, aerobic conditioning exercises, improve strength and fitness, and control weight. Patients should be realistic when they start exercising. They should learn how to exercise correctly, because exercising incorrectly can cause problems.

Most people with osteoarthritis exercise best when their pain is least severe. Start with an adequate warmup and begin exercising slowly. Resting frequently ensures a good workout. It also reduces the risk of injury. A physical therapist can evaluate how a patient's muscles are working. This information helps the therapist develop a safe, personalized exercise program to increase strength and flexibility.

Many people enjoy sports or other activities in their exercise program. Good activities include swimming and



## Enjoy a "Good-Health Attitude"

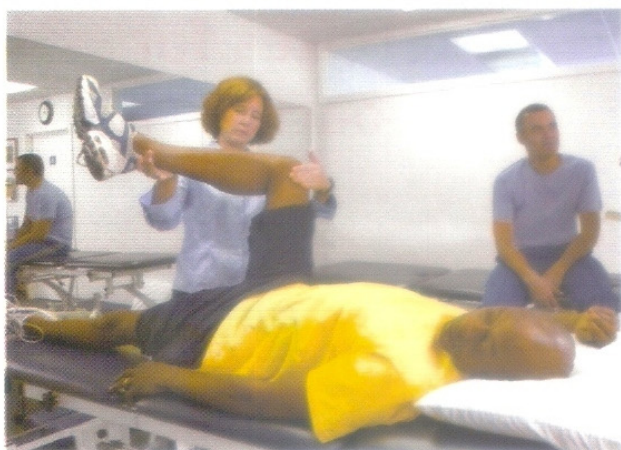
- Focus on your abilities instead of disabilities.
- Focus on your strengths instead of weaknesses.
- Break down activities into small tasks that you can manage.
- Incorporate fitness and nutrition into daily routines.
- Develop methods to minimize and manage stress.
- Balance rest with activity. Develop a support system of family, friends, and health professionals.

aquatic exercise, walking, running, biking, cross-country skiing, and using exercise machines and exercise videotapes.

People with osteoarthritis should check with their doctor or physical therapist before starting an exercise program. Health care providers will suggest what exercises are best for you, how to warm up safely, and when to avoid exercising a joint affected by arthritis. Pain medications and applying ice after exercising may make exercising easier.

***Body, Mind, Spirit:*** Making the most of good health requires careful attention to the body, mind, and spirit. People with osteoarthritis must plan and develop

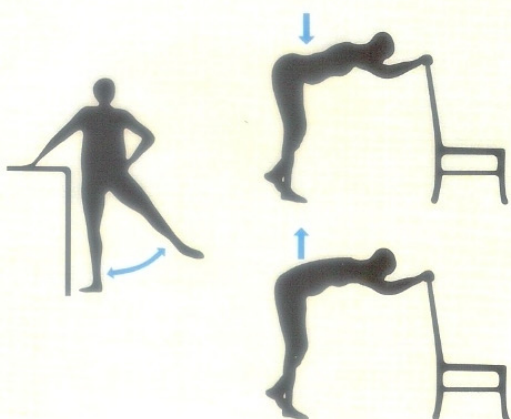




daily routines that maximize their quality of life and minimize disability. They also need to evaluate these routines periodically to make sure they are working well.

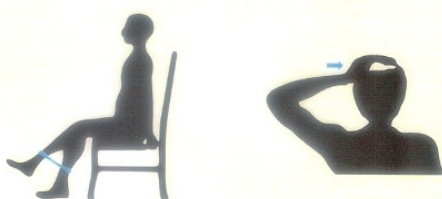
Good health also requires a positive attitude. People must decide to make the most of things when faced with the challenges of osteoarthritis. This attitude - a good-health mindset - doesn't just happen. It takes work, every day. And with the right attitude, you will achieve it.

# Exercises for Osteoarthritis

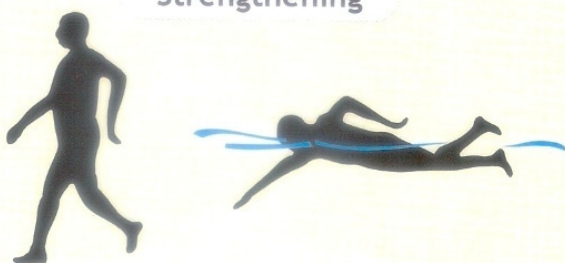


Range of motion

People with osteoarthritis should do different kinds of exercise for different benefits to the body.



Strengthening



Aerobics/heart and lung health


Exercise plays a key part in comprehensive treatment. Researchers are studying exercise in greater detail and finding out just how to use it in treating or preventing osteoarthritis. For example, several scientists have studied knee osteoarthritis and exercise. Their results included the following:

- Strengthening the thigh muscle (quadriceps) can relieve symptoms of knee osteoarthritis and prevent more damage.
- Walking can result in better functioning, and the more you walk, the farther you will be able to walk.
- People with knee osteoarthritis who were active in an exercise program feel less pain. They also function better.

Research has shown that losing extra weight can help people who already have osteoarthritis. Moreover, overweight or obese people who do not have osteoarthritis may reduce their risk of developing the disease by losing weight.



## Hope for the Future

 Research is opening up new avenues of treatment for people with osteoarthritis. A balanced, comprehensive approach is still the key to staying active and healthy with the disease. People with osteoarthritis should combine exercise, relaxation education, social support, and medicines in their treatment strategies. Meanwhile, as scientists unravel the complexities of the disease, new treatments and prevention methods should appear. They will improve the quality of life for people with osteoarthritis and their families.

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